

Fam. *Zygænidæ*.*Tassia? amata*, sp. n.

Male.—Head and antennæ black; collar and tegulæ metallic green; thorax, abdomen, and legs glossy black. Primaries black, shaded with metallic red and gold from the base to the end of the cell; the fringe black: secondaries glossy blue-black; a small hyaline spot at the anal angle. Underside of both wings glossy black.

Expanse $1\frac{3}{4}$ inch.

Hab. Abyssinia, Dire Daoua (*G. Kristensen, Mus. Druce*).

LVIII.—*A Revision of the Genus Pelecorhynchus of the Family Tabanidæ.* By GERTRUDE RICARDO.

PANGONINÆ.

PELECORHYNCHUS, Macquart.

Pelecorhynchus, Macq., Dipt. Exot.* Suppl. iv. p. 332 (1850); Loew, Dipt. Südafrik. (1860); Ricardo, Ann. & Mag. Nat. Hist. (7) v. p. 101 (1900).

Cenomyga, Thoms., Eugen. Resa, p. 449 (1868).

The species of this genus are at once distinguished by the hatchet-shape of proboscis, by the curved anal vein of wing and open anal cell, and by the subulated antennæ. The distribution of the species is interesting, the known species all being found in Australia and Chile (S. America). The species now number eight, three of them being described for the first time; only two out of the eight come from Chile.

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| 1. Wings marked with dark spots or bands | 2. |
| Wings not marked with dark spots or bands | 4. |
| 2. The whitish bands of abdomen interrupted, the thorax with two white spots on black stripes | <i>crystaloides</i> , Walker. |
| The whitish bands of abdomen entire, no spots on thorax | 3. |
| 3. Spots of wings pale brown, pubescence on anterior part of sides of thorax blackish, hairs on base of cheeks yellow | <i>maculipennis</i> , Macquart. |

* The original pagination of Macquart's work 'Diptera Exotica' is used throughout this paper.

- Spots of wings deep blackish brown and larger, pubescence on anterior part of sides of thorax and hairs on base of cheeks reddish. *nigripennis*, sp. n.
4. Wings pale russet. Body russet above, black below, with a median dorsal black stripe on dorsum *fulvus*, sp. n.
- Wings hyaline, sometimes tinged yellowish. 5.
5. Abdomen black, shining. Thorax brownish with blackish hairs at sides. Scutellum brown. Legs black *fusciger*, Walker.
- Abdomen reddish brown, shining. Thorax reddish brown, with red hairs at sides. Scutellum brown, with red hairs on posterior border. Legs reddish *claripennis*, sp. n.
- Abdomen, thorax, and scutellum clothed with orange-red pubescence. Legs reddish yellow *aurantiacus*, Ricardo.
- Abdomen, thorax, and scutellum black, with whitish thoracic stripes and spots on abdomen *darwini*, Ricardo.

Pelecorhynchus maculipennis, ♀, Macquart.

Pelecorhynchus maculipennis, Macq., Dipt. Exot. Suppl. iv. p. 332, pl. ii. fig. 6 (1850); Ricardo, Ann. & Mag. Nat. Hist. (7) v. p. 102 (1900).

Silvius personatus, Walker, List Dipt. i. p. 192 (1848), et v. Suppl. i. p. 267 [*Dasybasis*]; Ricardo, Ann. & Mag. Nat. Hist. (7) v. p. 102 (1900).

Pelecorhynchus ornatus, Schiner, Novara Reise, Dipt. p. 98 (1868); Williston, Kansas Univ. Quart. iii. p. 192 (1895).

Black. Abdomen with red bands. Antennæ red. Legs testaceous. Wings with brown spots. Length 6 lines ♂ ♀. Palpi testaceous with yellowish hairs ♂, white ♀. Beard yellowish ♂, whitish ♀. Face on the convex part brownish with black hairs; sides with white tomentum. Forehead brown, with lateral stripes of brown tomentum and a little white tomentum in front, in female. Antennæ: the first two joints and the last four divisions of the third joint brown. Thorax black ♂, brown ♀, with two dorsal black narrow stripes and two slate-coloured stripes the same width, ♀; sides with yellowish hairs ♂, with whitish hairs ♀; a tuft of bright red hairs in front of root of wings. Abdomen, ♂: second, third, and fourth segments with testaceous shining band, interrupted in the middle; posterior border of these segments bordered with short bright red hairs; that of the female differs in these testaceous bands having white tomentum. Legs testaceous, the last joints of tarsi brown; the hairs of the posterior legs black on outside border, brownish on inside border. Wings a little yellowish; the brown spots at base of cells.

From east coast of New Holland. Museum. Macquart, Dipt. Exot. Suppl. iv. p. 332.

Through the kindness of M. Surcouf I was able to see the male and female types of this species in the Paris Museum in the spring of 1908, and was confirmed in my opinion that Macquart in describing the genus was in error in stating that the hind tibiæ are unprovided with spines, which are quite distinct in these types, and his drawing of the wing is incorrect, the anal cell being *open*, though narrowed, at border, and the anal vein is curved. This establishes the synonymy of the genus *Cænopynga* formed by Thomson with Macquart's genus. See my remarks in the 'Annals' (7) vol. v. p. 101 (1900).

I also discovered that *P. personatus*, Walker, is identical with this species and that the specimens I identified as *P. maculipennis* are a new species. From Schiner's description of *P. ornatus*, there is no doubt it is identical with Macquart's species, Schiner being unable to identify it from Macquart's description, though he remarks it is very nearly related. The species is recorded by Macquart from Australia, by Schiner from Auckland, New Zealand, and by Williston from Queensland.

There are specimens in the Brit. Mus. Coll. from Australia (*Hunter*); the Walker type (a female) and males from New South Wales between Sidney and Moreton Bay (*Stuchbury*). In Mr. French's collection sent to me for identification there are males and females from Victoria. The palpi in Macquart's types are small with white hairs, the proboscis hatchet-like, the face convex with small pits on each side. Forehead broad and short with ocelli, pubescence black. Antennæ red, awl-shaped. Eyes bare. Abdomen reddish brown, with three grey tomentose bands on the second, third, and fourth segments, produced in the middle as a roundish spot, the segmentations red-haired. Thorax in male and female blackish, with three indistinct grey stripes. Legs wholly red. Wings hyaline, with a black-brown fore border and three pale brown-coloured bands of spots—the first at the base of basal cells; the second extending from the fore border of wing over the middle cross-veins to the fifth longitudinal vein; the third is divided into spots, so that the anterior one is situated in the middle of the second longitudinal vein, with the second spot almost joining it, lying round the base of the fork of the third vein, and a third quite isolated spot is present at the apex of discal cell; besides these spots, the apex of second longitudinal vein and upper branch of third longitudinal vein

have a spot-like brown shading, and a similar shading is seen on the conspicuously curved axillary vein. The description of the wings is taken from Schiner's excellent description. In Walker's type an extra brown spot is present on the vein dividing the second and third posterior cells, and a faint one is discernible on the apex of fifth longitudinal vein : these are not present or are very faint on the other specimens. The fourth posterior cell is much narrowed, but open at border, in this species.

Pelecorhynchus eristaloides, ♂, Walker.

List Dipt. i. p. 193 [*P. Silvius*] (1848), et v. Suppl. i. p. 267 [*Dasybasis*] (1854); Ricardo, Ann. & Mag. Nat. Hist. (7) v. p. 102 (1900).

Type (♂) and another male from Australia (*Children Coll.*), and a female from S.E. Tasmania (*E. D. Atkinson*).

This species is nearly allied to *Pelecorhynchus maculipennis*, Macq., but distinguished by the white tomentose bands on the second, third, and fourth segments of abdomen being interrupted in the middle and by the presence on the thorax of two striking elongated white spots, each situated on a black stripe which reaches the whole length of the greyish-brown thorax. In the male the hairs on the face are black and thick. Beard yellowish. In male and female the hairs at sides of thorax are black, reddish at base of wings. Markings of wings very similar to those of *P. maculipennis*, but the median band of brown spots is narrower, and the two spots on the second and third veins are widely separated, that on the second vein being nearer base of vein, below the half length of vein; the apex of wing is brownish, so that the apical spots are not distinct.

Length of type and other specimens varies from 15–20 mm.

Pelecorhynchus nigripennis, ♂ ♀, sp. n.

Type (♂) from New South Wales; type (♀) from Dandenong Ranges, Victoria (*French Coll.*); ♀ from Tasmania (*M. Allport*); a ♂ in Mr. French's collection from Victoria.

These specimens, which I at first took to be Macquart's species before seeing the type, have not been described before.

They are nearly related to *P. maculipennis*, but are distinguished from it by the deep blackish-brown markings on wings, which are also larger. The base of wings is more widely dark, extending to the posterior border and joined by

the dark fore border to the middle band of spots, which in this species is wider and extends to the posterior border of wing, and has an almost straight basal border, the upper border a little sinuous, but not so irregular as in Macquart's species; the spots of second and third vein are here completely joined, reaching from the fore border across the base of fork of third vein, sometimes reaching the fourth vein, both borders nearly straight; the spot at apex of discal cell is present, and also the two apical spots, which are joined. Red hairs are visible at base of cheeks, on sides of thorax, and a tuft on breast, besides the usual segmentations of abdomen and border of scutellum. The colouring of thorax and abdomen is darker, being blackish brown, with the same grey tomentose bands.

Length of type about 18 mm.

Pelecorhynchus fulvus, ♀, sp. n.

Type (♀) and two others from Alps, Victoria, Australia (*French Coll.*).

This handsome well-marked species will be easily identified by the bright russet colour of the thorax, abdomen, and wings, and by the black legs with yellow tarsi; there is a black dorsal line on the abdomen and the apex of the wings is clouded with black.

Length 16 mm.

Face black, very convex, shining, bare, divided from the cheeks by deep furrows, the cheeks covered with grey tomentum and with a few black hairs. Palpi brown, the last joint egg-shaped, with black pubescence and a few white hairs below. Beard white.

Antennæ black, the second joint fulvous, the first two joints with black hairs. Forehead about as broad as it is long, black, with a band across the middle of yellowish-brown tomentum; pubescence black. Thorax bright russet, with same coloured pubescence; the sides of dorsum black, with blackish pubescence and a few white hairs above the wings; sides and breast black, with long white-haired tufts. Abdomen bright russet, with short imperceptible red pubescence; the sides of dorsum black, corresponding with sides of thorax, and a median black stripe extends almost to the apex, reaching halfway across the fourth segment; sides with black hairs, white hairs on the first two segments; underside black. Legs black, the tarsi pale yellow, with yellowish-white pubescence; elsewhere the pubescence is black. Wings pale

russet, dark brown at apex, not reaching the extreme apex, most intense round the second and third veins on their apical third, extending as a lighter shade in the submarginal, all posterior, and the discal cells, and on the apical half of the second basal cell; all cells open, the anal vein curved; the alulæ brown, fringed with white hairs. Halteres brown.

Pelecorhynchus fusconiger, Walker.

List Dipt. i. p. 192 (1848) [? *Silvius*], et v. Suppl. i. p. 267 (1854) [*Dasybasis*]; Ricardo, Ann. & Mag. Nat. Hist. (7) v. p. 102 (1900).

Type (♀) from Australia (*presented by Lord Derby*) (1844), and another female from New South Wales (*J. J. Walker*) (1904); males from Australia (*Hunter*) and New South Wales, between Sidney and Moreton Bay.

A species with wings clear, tinged yellowish; the thorax brownish; abdomen shining black. Legs blackish.

Length, females 16–18 mm.; males 16–17½ mm.

Face blackish, covered with yellowish-grey tomentum, convex, divided by deep furrows from the cheeks; in the centre on the raised part it is reddish brown, pubescence on face black. Beard yellowish. Palpi reddish, with long black hairs, the second joint egg-shaped.

Antennæ reddish: the first joint blackish, with black hairs; the second pale reddish, with some black hairs. Forehead nearly as broad anteriorly as it is long, slightly narrower at vertex, yellowish brown with black pubescence and indications of two narrow brown stripes; ocelli shining, blackish brown.

Thorax same colour as forehead, with black pubescence, some yellowish hairs on basal part; sides with black hairs above and denser pale yellowish hairs beneath them on the posterior half only. Breast blackish, with some brownish tomentum and black hairs; a dense tuft of pale yellow hairs at base of wings. Scutellum similar to thorax, fringed with dull fulvous hairs.

Abdomen black, shining, with traces of whitish or greyish pubescence. Legs blackish, the anterior and middle tibiae and tarsi dull reddish yellow.

Wings clear, veins reddish yellow, slightly tinged with yellow on fore border.

Male identical; the eyes meet, facets all equal; upper part of face below antennæ covered with dense black pubescence, the hairs long.

Pelecorhynchus claripennis, ♀, sp. n.

Type (♀) from Dandenong Ranges, Victoria, Australia.

This species is allied to *P. fusconiger*, Walker, but differs in the presence of bright red hairs on the sides of the thorax, on the scutellum, and on abdomen, and the legs are reddish, not black.

Brown, with quite clear wings. Legs yellowish red.

Length 15 mm.

Face convex, divided by deep furrows from the cheeks, reddish brown with black pubescence, the cheeks with some grey tomentum, which also appears on the face. Palpi reddish, the second joint egg-shaped, with long yellowish hairs at apex. Beard pale yellow. Antennæ destroyed except the first joint, which is reddish with black hairs. Forehead broad, nearly as broad anteriorly as it is long, narrower at vertex, brown with short black pubescence. Ocelli present. Thorax brown, covered with fulvous pubescence, a few darker hairs intermixed; posterior border and sides of thorax dull yellowish red, with deep red hairs at base of wing and on posterior border; breast reddish brown, with black hairs and a large tuft of cream-white hairs below wings. Scutellum same as thorax, with deep red hairs on posterior border. Abdomen reddish brown, shining, with scanty black pubescence on dorsum and deep red hairs fringing the hind borders of the last three segments; sides with some black hairs and deep red hairs, the latter most numerous at apex; underside brown, with black hairs and a fringe of red hairs on second and third segments. Legs red; the femora brown, with grey tomentum and white hairs on the anterior pair, black on the others; femora and tibiæ fringed with black hairs; on upper side of middle and posterior femora the hairs are yellowish. Wings hyaline, veins yellow, all cells open, the anal vein curved.

Pelecorhynchus darwini, Ricardo.

Ann. & Mag. Nat. Hist. (7) v. p. 102, pl. i. fig. 1 (1900).

Dr. Kertész sent me for identification a male and female from Concepcion, Chile, which are identical with the above type from Chiloe, S. Chile, with the exception of the white spots on abdomen, which in these are six in number, two each on the second, third, and fourth segments; in the type these are only visible on the third and fourth segments of the dorsum, though they all appear on the underside of abdomen.

Pelecorhynchus aurantiacus, Ricardo.

Ann. & Mag. Nat. Hist. (7) v. p. 103, pl. i. fig. 2 (1900).

This species, also from Chile, is at once distinguished by the dense orange-rufous pubescence on the body.

All the types are in the British Museum collection, with the exception of the Macquart types, which are in the Natural History Museum, Paris.

LIX.—*Descriptions and Records of Bees.*—XXVIII.

By T. D. A. COCKERELL, University of Colorado.

Anthophora darwini, sp. n.

♂.—Length 10 or 11 mm.

Black, the hair of head and thorax above mixed bluish white and black, below white. Eyes very large; facial quadrangle much longer than broad; labrum (except a spot at each basal corner and the linear apical margin), basal two-thirds of mandibles, clypeus (except a large foot-shaped mark, with long heel, on each side above), space between clypeus and eyes, a broad low triangular supra-clypeal mark, and scape in front, all *yellow* (reddened by cyanide in type); flagellum ferruginous beneath. Maxillary palpi 6-jointed: the second joint very large and robust, with a comb of numerous short bristles on its anterior side, and a few much longer ones (two near the middle and two apical), as well as some minute ones, posteriorly; apical joint very slender, with a pair of small apical bristles; length of joints in μ : (2) about 595, (3) 270, (4) 185, (5) 85, (6) 100. Tongue long, *covered with flattened spatulate hairs*, which are about 220 μ long and 30 wide. Tegulae dark reddish; wings dusky; legs with white hair on outer side, and black on inner, hair of hind tarsi entirely black. Abdomen with five broad apical bands, which are *bright shining blue*, reminding one of the colour of some *Lycænid* butterflies; last ventral segment shining, with a strong median keel.

Much like *A. walkeri*, Ckll., but the colour of the abdominal bands is quite different, without any tinge of green. The spatulate hairs of the tongue are also found on *A. pulchra*, Smith (specimen from F. Smith's collection), and doubtless other allied species. They are found even in the American